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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,817	03/04/2004	Yui-Shin Fran	0941-0934P	3665

2292 7590 11/23/2005

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EXAMINER

DONG, DALEI

ART UNIT PAPER NUMBER

2879

DATE MAILED: 11/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/791,817	FRAN ET AL.	
	Examiner	Art Unit	
	Dalei Dong	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 04 November 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 4 and 5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4 and 5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☒ Certified copies of the priority documents have been received in Application No. 10/011,281.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

1. The Amendment filed November 4, 2005, has been entered and acknowledged by the Examiner.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 4 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,417,606 to Nakamoto.

Regarding to claim 4, Nakamoto discloses in Figures 1, 2, 7, 8, 21 and 23 a cathode substrate of a carbon nanotube (CNT) field emission display, comprising: a glass substrate (701); a cathode layer (702) formed overlying the glass substrate (701), wherein the surface of the cathode layer (702) is defined as a plurality of electron-emitting areas spaced apart from each other, and the electron-emitting areas are uniformly arranged in array; an insulating layer (704) formed overlying the glass substrate (701) and having an opening, wherein the opening exposes the cathode layer (702); a gate electrode layer (705) formed overlying the top of the insulating layer (704) and exposing the cathode layer (702); and a CNT structure (plurality of emitters 703) formed overlying the cathode layer (702), wherein the CNT structure comprises a plurality of sub-CNT structure

arranged in array (see column 6, lines 37-51 and column 8, line 66 to column 9, line 12); wherein, the sub-CNT (703) structures are formed overlying the plurality of electron-emitting areas respectively, such that an edge effect is formed at the periphery of each sub-CNT structures; and wherein, the sub-CNT structures (703) are spaced apart from each other without the insulating layers (704) therebetween.

Regarding to claim 5, Nakamoto discloses in Figures 1, 2, 7 and 8, the profile of the electron-emitting area (opening of the insulating layer) is quadrilateral circular or any other physical appearance.

#### *Response to Arguments*

4. Applicant's arguments filed November 4, 2005 have been fully considered but they are not persuasive.

In response to Applicant's argument that prior art of record taken alone or in combination fails to teach or suggest the cathode layer having a surface with a plurality of electron emitting areas spaced apart from each other and being uniformly arranged in an array. The Examiner asserts that Nakamoto reference shows in Figures 1, 2, 7 and 8, only a single electron emitting area. Nakamoto reference further demonstrates a plurality of electron emitting areas in Figures 21 and 23, which are spaced apart from each other and uniformly arranged in an array. Thus, the Examiner asserts that the Nakamoto reference teaches the claimed limitation of a cathode layer having a surface with a plurality of electron emitting areas spaced apart from each other and being uniformly

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arranged in an array. Therefore, the Examiner asserts that the prior art of record teaches the claimed invention and maintains the rejection.

***Conclusion***

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalei Dong whose telephone number is (571)272-2370. The examiner can normally be reached on 8 A.M. to 5 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on (571)272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



D.D.

November 18, 2005



Joseph Williams  
Primary Examiner  
Art Unit 2879